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Title : A Method for Partially Recovering Floor Plates

#### Specifications

1. Title of the Invention

A Method for Partially Recovering Floor Plates

2. Claims

(1) A method for partially recovering floor plates characterized by that part of already installed floor plates are removed, groove joints are arranged along adjacent side ends of both floor plates that were installed adjacent to the above removed floor plates, and foaming synthetic resin is injected into concave arranged along the both side ends of new floor

plates, and the above new floor plates are inserted into the position where there were removed floor plates, and then the above foaming synthetic resin in the above concave is formed, thereby tongue joints are formed so as to insert into groove joints of adjacent floor plates.

(2) A method for partially recovering floor plates set forth in claim 1 characterized by that the above groove joints and tongue joints of floor plates are formed into regular waveforms with a certain pitch.

### 3. Detailed Description of the Invention

The present invention relates to a method for partially recovering floor plates.

In the conventional floor plates (1)' made of foaming materials, as shown in FIG.1, tongue joints (2) having serrated engaging portions (6) on both the sides thereof are engaged with groove joints (3) having serrated engaged portions (7) on both the inside sides thereof, thereby floor plates (1)' are jointed and laid on a floor, and the engaging portions (6) and the engaged portions (7) are engaged closely in parallel with one another, thereby a gap A between floor plates (1)' is made so as to be minimum. And a nail hole is made at space (8) arranged on the tongue joint (2), thereby thickness H where nail is effective is made large so that nail should be effective. And adhesive (9) is applied onto the bottoms of the groove joints (3), thereby the adhesive area between the tongue joints (2) and the groove

joints (3) is make large, and draft from underfloor section is prevented.

While, in other type of floor plates (1)' made of foaming materials according to the prior art, as shown in FIG.2, a tongue joint (2) at one side of floor plate (1)' is engaged with a groove joint (3) of other side of floor plate (1)', and an engaging portion (6) at the bottom of the tongue joint (2) is engaged with a engage portion (7) that is parallel with the engaging portion (6) at the bottom of the inside of the groove joint (3), and thereby a gap A between floor plates (1)' are made minimum and floor plates are jointed secure. And a kerf (10) is made at the bottom of the groove joint (3), thereby it is prevented cracks from occurring on the groove joint (3) when the groove joint (3) is engaged into the tongue joint (2).

These types of floor plates (1)' are jointed by engaging tongue joints (2) and groove joints (3), as a result, it is impossible to replace part of floor plates (1)' with new floor plates nor insert new plates, accordingly, when the floor is recovered, all the floor plates (1)' must be removed as a whole, which has been a problem with the conventional floor plates according to the prior art.

The present invention has been made in consideration of the above problem with the conventional technology, accordingly one object of the present invention is to provide a method for partially recovering floor plates which enables to partially

remove floor plates and partially recover a floor with new floor plates.

In reference to the attached drawings, the present invention is explained in details hereinafter. First, among floor plates (1) laid on a floor bed (11) with tongue joints (2) engaged with groove joints (3), a saw is inserted into a gap A between both the side floor plates (1) of the floor plate (1) to be replaced and the tongue joints (2) are cut off, thereby connection of floor plates (1) is cut off, and the floor plate (1) to be replaced is removed. In the next place, tongue joints (2) left in the groove joints (3) of adjacent floor plates (1) are removed, and the portion where there were tongue joints (2) of the floor plates (1) is cut off and groove joints (3) are newly formed. FIG.4 shows a new floor plate (1), and along both the sides of this floor plate (1), formed are relatively shallow and wide slots (12) and relatively deep concave portions (4). This new floor plate (1) may be substituted by a floor plate that is formed in a shape as shown in FIG.4 exclusive for recovering, or floor plate where slots (12) and concave portions (4) are formed by cutting both ends of floor plate (1) having groove joints (3) and tongue joints (2). Then, foaming synthetic resin (5) made of synthetic resin and foaming base material is injected into the concave portion (4) of the floor plate (1). The bottom of the concave portion (4) is dented so as to easily hold the foaming synthetic resin (5). Then, the new floor plate

(1) is inserted into the position where there was the removed floor plate (1), and in a status wherein the new floor plate (1) is level with the adjacent floor plate (1), the foaming synthetic resin (5) is foamed and hardened. The foamed and hardened foaming synthetic resin (5) expands into groove joints (3) to form a tongue joint (2), and also expands to the slot (12) to seal the gap A between floor plates (1) and connects floor plates (1) one another secure. By the way, with respect to recovering of new floor plates (1), contact surface with the floor bed 8119 is adhered by adhesive (13).

FIG.5 shows other preferred embodiment according to the present invention, wherein groove joints (3) and tongue joints (2) are formed into waveforms snaking at a certain pitch, since the groove joints (3) and tongue joints (2) are formed into waveforms, it is possible to prevent displacement of floor plates (1). Especially, in the case of checker patterns on surface, it is possible to prevent displacement in checker patterns. And further, by selecting an appropriate dimension of the pitch P of waveforms, it is possible to arrange floor plates in the pattern as shown in FIG.6 (a) and further in the pattern as shown in FIG.6 (b). When nail is hit into floor plate, it may be hit into the valley portion a of the tongue joint (2) farthest away from the surface, and thereby it is possible to prevent nail head from coming up to the surface.

As described heretofore, according to the present

invention, wherein part of already installed floor plates are removed, groove joints are arranged along adjacent side ends of both floor plates that were installed adjacent to the above removed floor plates, and foaming synthetic resin is injected into concave arranged along the both side ends of new floor plates, and the above new floor plates are inserted into the position where there were removed floor plates, and then the above foaming synthetic resin in the above concave is formed, thereby tongue joints are formed so as to insert into groove joints of adjacent floor plate, it is possible to partially remove floor plates and partially recover a floor with new floor plates. And moreover, the present invention offers an advantage that even after recovering, floor plates are jointed secure with combination of tongue joints and groove joints.

#### 4. Brief Description of the Drawings

FIG.1 is a diagonal view of one example of arrangement of floor plates with partial kerf. FIG.2 is a diagonal view of other example of arrangement of floor plates with partial kerf. FIG.3 is a diagonal view of one preferred embodiment with partial kerf according to the present invention. FIG.4 is a cross section showing a new floor plate for recovering, while FIG.5 is a diagonal view showing another preferred embodiment of the present invention, and FIG.6 (a) and (b) are plane views showing improved arrangements of floor plates.

(1) Floor plate

- (2) Tongue joint
- (3) Groove joint
- (4) Concave
- (5) Foaming synthetic resin

FIG.1

FIG.2

FIG.3

FIG.4

FIG.5

FIG.6

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④床材の一部貼替え方法

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明 細 書

1. 発明の名称

床材の一部貼替え方法

2. 特許請求の範囲

(1) 床に既設の床材の一部を除去し、除去され  
た床材に隣接していた両床材の隣接側端面に沿つ  
て雄ざね部を切欠し、新しい床材の両側端面に沿  
つて設けられた凹所内に発泡性合成樹脂を注入し  
、この新しい床材を除去された床材のものと位置  
に嵌込み、この嵌凹所内の発泡性合成樹脂を発泡  
させて隣接する床材の雄ざね部に嵌合する雄ざね  
部を成形することを特徴とする床材の一部貼替え  
方法。

(2) 床材の雄ざね部及び雌ざね部を一定ピッチ  
の規則的な形状に形成することを特徴とする特許  
請求の範囲第1項記載の床材の一部貼替え方法。

3. 発明の詳細な説明

本発明は床材の一部貼替え方法に関する。

発泡性基材の床材(1)にあつては、第1図に示す

ように、両面にのこ歯状の係合部(6)を持つ雄ざね  
部(2)と両内面にのこ歯状の被係止部(7)を持つ雌ざ  
ね部(3)とを嵌合させることにより床材(1)同士を連  
結して床に敷設されており、しかも係合部(6)と被  
係止部(7)とが互いに平行に密着して係合すること  
により床材(1)間の隙間Aが最小になるようにして  
あつた。また、雄ざね部(2)の上に設けた空所(11)に  
釘穴を設けることによつて釘の効く厚みHを大き  
くし、釘の効きを良くしてあつた。また雌ざね部  
(3)の底に接着剤(8)を塗布しておいて雄ざね部(2)と  
雌ざね部(3)の接着面積を大きくすると共に、床下  
からの隙間Bを防止してある。

また、別な発泡性基材の床材(1)'にあつては、第  
2図に示すように、床材(1)'側の雄ざね部(2)と床  
材(1)側の雌ざね部(3)とを嵌合させ、雄ざね部(2)  
下面の係合部(6)と、雌ざね部(3)下面の係合部(6)  
に平行な被係止部(7)とを嵌合させて床材(1)間の隙  
間Aを最小にして空所に連結してあつた。また、  
雌ざね部(3)の底には切り溝(9)を切入してあつて、  
雄ざね部(2)を雌ざね部(3)に嵌合させるときに雄ざ



し、この新しい床材(11)の凹所(14)は雄ざね部(12)と雌ざね部(13)とを嵌合させて連結されているために、後から床材(11)の一部を取外したり、既込んだりすることができず、貼替える場合には床材(11)全部をはがさなければならなかつた。

本発明は以上の技術的背景に鑑みてなされたものであり、その目的とするところは床材の一部だけをはがして新しい床材に貼替えることができる床材の一部貼替え方法を提供することにある。

以下本発明を添付図により詳述する。まず、雄ざね部(12)と雌ざね部(13)とを嵌合させて根太(11)の上に敷設された床材(11)のうち、貼替えようとする床材(11)の両側の床材(11)間の隙間Aに鋸を入れて雄ざね部(12)を切断し、これにより床材(11)同志の連結を断ち、この後貼替えようとする床材(11)をはがして除去する。次に隣接する床材(11)の雌ざね部(13)内に残つた雄ざね部(12)を除くと共に隣接する床材(11)の雌ざね部(13)のあつたところを切除して新しく雌ざね部(13)を形成する。第4図に示すものは新しい床

材(11)の凹所(14)内に雄ざね部(12)を形成してある。この新しい床材(11)は、予じめ第4図のような形状に形成された貼替え専用の床材であつても良く、雄雌ざね部(12)(13)を有する床材(11)の両端を削つて溝部(12)と凹所(14)とを形成したもので良い。次に、この床材(11)の凹所(14)内に合成樹脂と発泡材から成る発泡性合成樹脂(15)を注入する。凹所(14)は発泡性合成樹脂(15)を保持し易いように下面が下方へ窪ませられている。従いて、この新しい床材(11)を除去された床材(11)のものの位置に既込み、新しい床材(11)と隣接する床材(11)とが上面面一になる状態で、発泡性合成樹脂(15)を発泡硬化させる。発泡硬化させられた発泡性合成樹脂(15)は雄ざね部(13)内へ膨張して雄ざね部(12)が形成されると共に、溝部(12)内へ広がつて床材(11)間の隙間Aをふさぐと共に床材(11)同志をしつかり接合する。なお、新しい床材(11)の貼替えに際しては、根太(11)との接面部分を接着剤(16)により接着する。

第5図に示すものは、本発明の他例であり、雄

ざね部(12)及び雌ざね部(13)を規則的な一定ピッチで蛇行する波状に形成したものであり、雄雌ざね部(12)(13)が波状に形成されていることによつて床材(11)同志の位置ずれを防止できるものである。特に、表面に市松等の模様が施されている場合には、模様ずれを防止できるのである。また、この波状のピッチPを適当な寸法に選ぶことにより、第6図(a)のようにいかだ張りにすることもでき、第6図(b)のようにリヤッコ張りにすることもできる。釘打ちを行うには、表面から最も離れた雄ざね部(12)の谷部分に打つことにより釘頭隆起現象を防止できる。

本発明は叙述の如く床に既設の床材の一部を除去し、除去された床材に隣接していた両床材の隣接面面に沿つて雌ざね部を切欠し、新しい床材の両側面面に沿つて設けられた凹所内に発泡性合成樹脂を注入し、この新しい床材を除去された床材のものの位置に既込み、この後凹所内の発泡性合成樹脂を発泡させて隣接する床材の雌ざね部に嵌合する雄ざね部を成形しているから、雄雌ざね

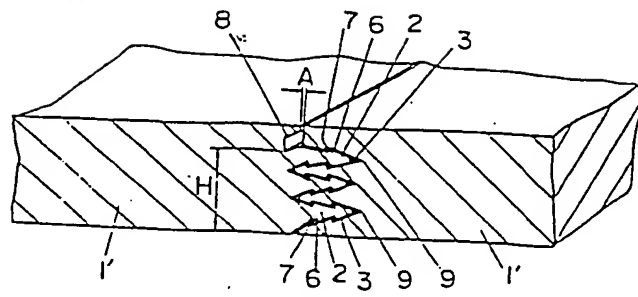
部を互いに嵌合させた床材をすべて床からはがすことなく、床材の一部をはがすだけで床材を貼替えることができるのであり、しかも貼替後も床材同志は雄ざね部と雌ざね部により強固に連結されているという利点がある。

#### 4 図面の簡単な説明

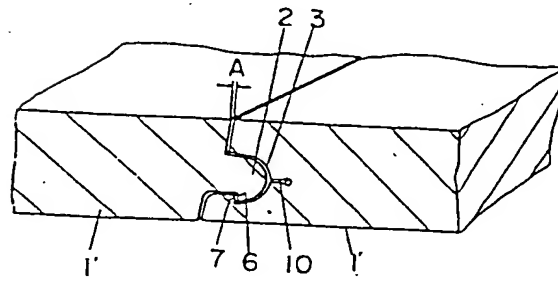
第1図は床材の敷設状態の一例を示す一部切欠した斜視図、第2図は床材の敷設状態の他例を示す一部切欠した斜視図、第3図は本発明の一実施例を示す一部切欠した斜視図、第4図は貼替えのための新しい床材を示す断面図、第5図は本発明の他例を示す斜視図、第6図(a)(b)は向上の施工状態を示す平面図である。

(11)…床材、(12)…雄ざね部、(13)…雌ざね部、(14)…凹所、(15)…発泡性合成樹脂。

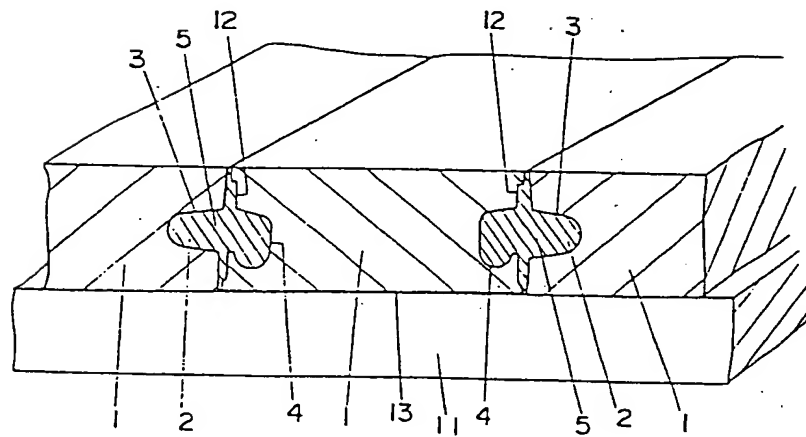
代理人 弁理士 石 田 長 七



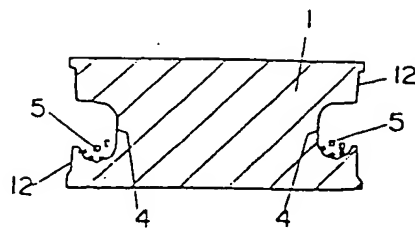
第 2 圖

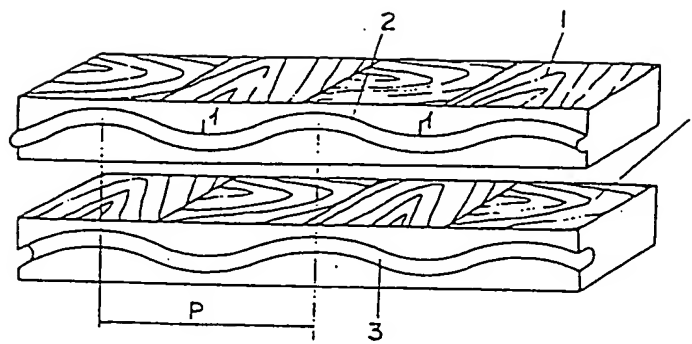


第 3 圖

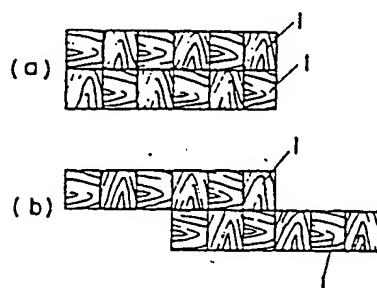


第 4 圖





第 6 圖



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